A. M. R. A.

Australian Model Railway Association

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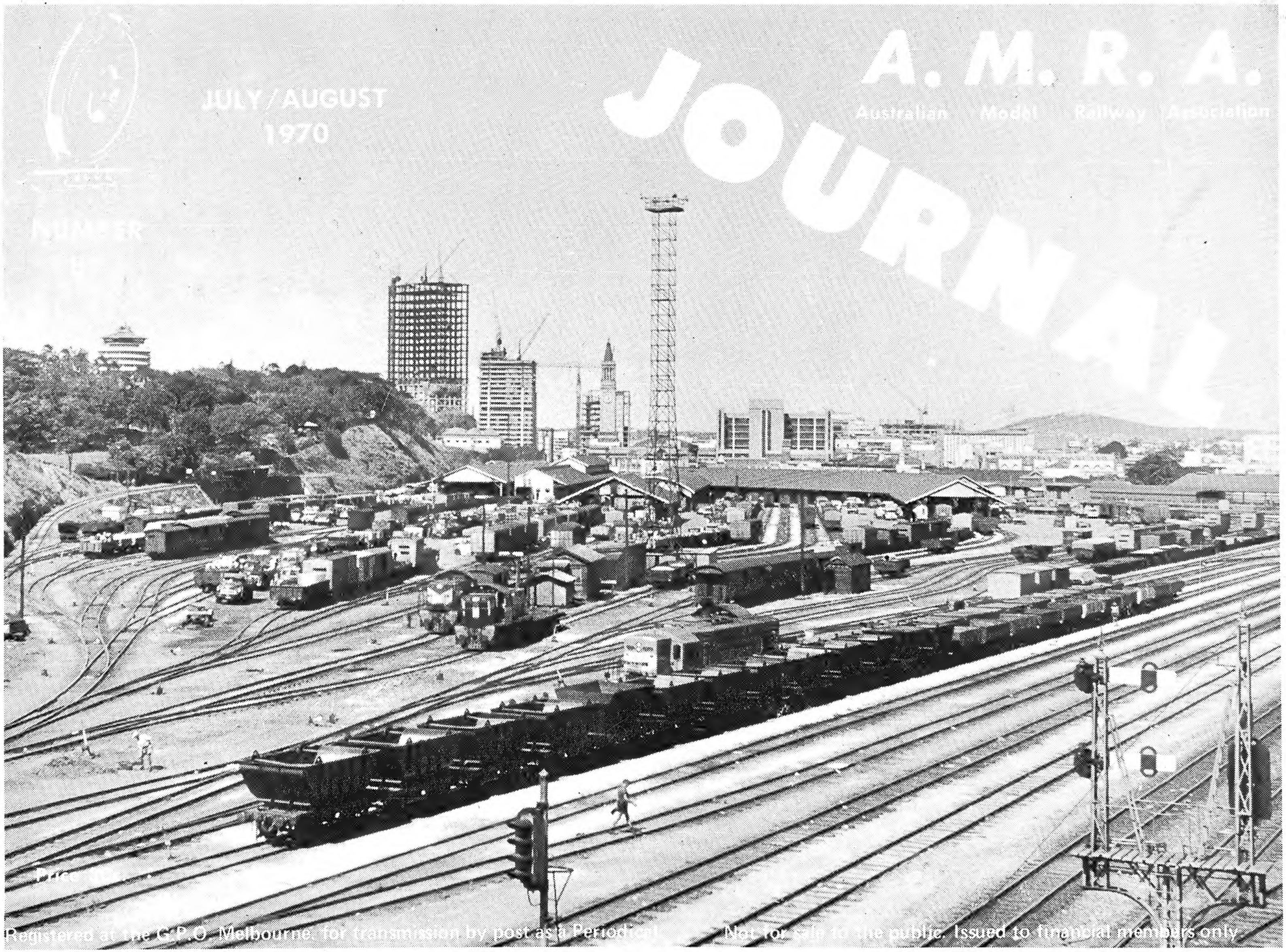

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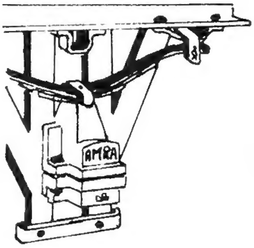

Editorial
JOURNAL BOX

IT'S YOUR RAILWAY.

As an Association, we issue to all new members a copy of our Standards, and Beginners Guide. This advice is issued to experienced modellers and beginners alike. Standards ensure some compatibility from model to model and from layout to layout. The Guide as its name suggests is a Guide for Beginners.

We must not lose sight of the fact that most of our members started off "playing trains" in one form or another and in their imagination were the General Manager, Traffic Superintendent, Construction Engineer, Ways and works Manager and Engine Driver of the X.Y.Z. Railway.

In my opinion, this is the beginning and end of our hobby. We are at liberty to suit ourselves. We know the limitations of our purse and our talents and when it all boils down, we only need to satisfy ourselves.

If we wish, we can run that "Big Boy" as a mixed goods, or with any other consist that takes our fancy. Or we can make our railway an exact replica of any system we wish to copy.

Please yourself, it's your railway.

COVER PHOTO:

Roma Street Station, Brisbane, during lunch hour on 17th April, 1969.

Photo by E. Frost.

Volume 19 Issue 87

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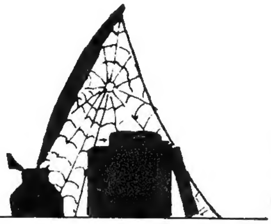
THE SECRETARY'S DESK



Maybe we have found the solution to the world's troubles. Take up model railways and then be too busy building and operating to find time to protest about anything.

There were three letters in the last Journal from which I expected some comment. So far I have only received one letter.

On the practical side of things, we as an Association, either on our own or combined with other similar groups, can have no effect on the policies of the established manufacturers. This should be obvious as otherwise they would have evolved a universal coupling wheel standards etc. It is just not their policy to make their products readily interchangeable with those of other manufacturers and it is only wishful thinking on our part to imagine that they ever will.

Rather, we should be interested in those individual groups that are popping up and producing models of the local prototype. These fellows are experimenting in production methods, some of which are quite good and some still have their problems. They need our support and encouragement, not only by buying their products, but in constructive criticism. Let them know what you think of their goods, any problem in the assembly etc. It is only by such information that they are likely to continue in business and improve.

Do not expect these products to be cheap initially. It is only when volume production arrives that costs can fall. It is just one of the facts of life to-day that ones labour is costly, so how can we honestly expect anyone to expend time and energy in producing an item for the hobby "cheap" just because it is a hobby.

As we will have to reprint a further supply of Standards, we would like to hear from any member who considers that any of them need revision. We have decided to use the NMRA Standards for N gauge when these are available. Also we propose dropping the information on X2F couplings.

Now another reminder of the proposed convention at Albury, Easter 1972, to celebrate AMRA's coming of age. Your early notification of your intention to participate will greatly assist in the organization of the occasion.

NORM READ.

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the basin and tarragindi railway

by TED FROST.

The building of the second The Basin and Tarragindi Railway caused me quite a few hours with a pencil and paper to come up with what I then thought was the most satisfactory plan to give me what I deemed necessary for all my requirements and yet remain inside certain physical limitations that were unalterable.

My requirements were to produce a layout which was:

1. Large enough to keep 2 persons busy during operation.
2. Not too large for one man operation.
3. Suitable to be used as an exhibition layout (a long mainline run is essential for this one - as is ease of dismantling and quick erection).
4. Capable of being moved around in my V.W. microbus.
5. It had to be constructed in an area 10 feet by 6 feet 6 inches - this being the area of "right of way" perloined from the home government for railway purposes. We do not as yet have a garage or railway room, but are confined to an alcove of the above size in the loungeroom.
6. The layout had to include an "eye-catcher" during exhibition - in this case a Grand Victoria Suspension Bridge which is 4 feet long.
7. All curves had to be 30 inches radius as I feel anything less looks too sharp and often gives running problems.

The Selection of the actual size of the overall layout was made easy by experience with the first layout of this name which was made on braced masonite with 2 boards, which, when fitted together used the complete length of right of way (10 feet) and for 3 feet the whole width of 6 feet 6 inches, leaving an operating space of one foot by 7 feet. Inconvenience of crawling under this layout made me settle on 9 feet length, and by shifting the boundary fence 6 inches (I am a most dishonest neighbour) I was able to obtain a 6 foot width.

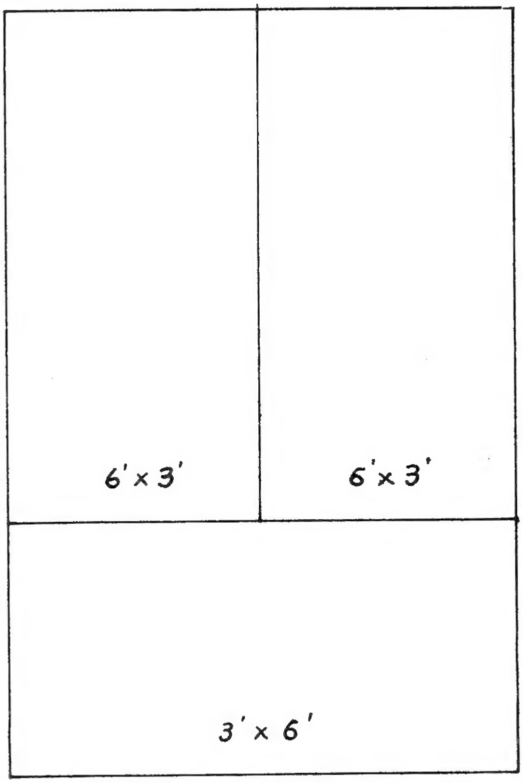


FIG. 1

The baseboard selected was a ¾" chipboard as it is soft to work on and strong enough not to require

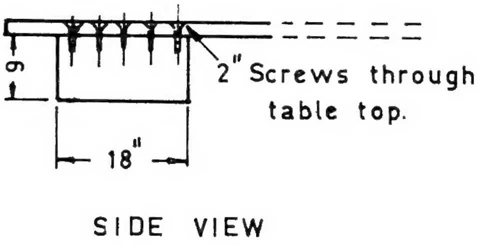


FIG. 2.

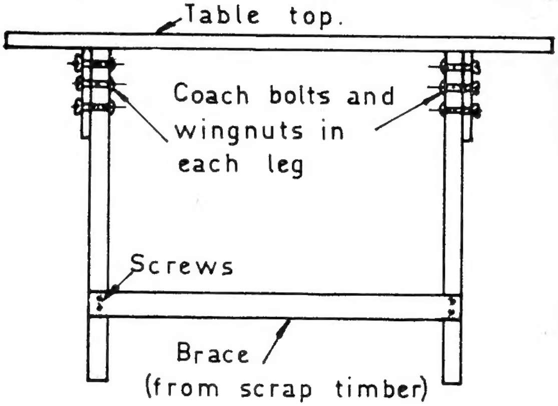


Table top.
Coach bolts and wingnuts in each leg
Screws
Brace (from scrap timber)

FIG. 3.

bracing. Cost was found to be about equal to a thinner board plus bracing timbers. The boards were to fit together as in figure 1.

The legs were attached to each board as per figure 2. A piece of ¾" chipboard was first screwed to the underside of the boards - one piece to each leg. I made sure these pieces were all of equal height so that they in effect became a set of small legs if required. The height was of no real consequence, so I used 9" here. Length of each piece varies somewhat as they were cut from odd pieces on my scrap timber heap. I have experimented with various types of legs for portable layouts, and the next layout will use two pieces of timber, set at right angles to each other, as I feel this would more than double the strength of the legs. The legs were then set into position against the 9" brace pieces (figure 3). These are of 2" x 1½" pine, 38 inches high. The height was what I considered to be a comfortable working height, and if you are from 5 feet 8 inches to 5 feet 10 inches in height this is quite satisfactory. The "set in" from sides and ends of the boards is not a critical factor so were just arrived at by guesswork. The 2" x 1½" legs are secured to the chipboard legs by three coach bolts and wringnuts and are braced as per figure 3.

The next step was to install the track rises for the high level track. This was accomplished with a series of blocks cut from scrap wood in graduated heights from a piece of cardboard up to a height of 3 inches over a distance of approximately 7 feet. This 3" overall height included the trackbed board plus rise, and was set by the height of the suspension bridge roadbed, to which it had to join. Both the "up" rises and "down" rises are on the same board and hidden under the mountains. This enabled me to use the same rise timbers to carry both tracks for most of the distance.

Track laying was the next step, and this was done as follows. First, 1/8" foam plastic was cut to the plan of the layout (obtainable from Clark Rubber Stores at about $1.00 per 6' x 3' sheet in grey (my choice), brown or charcoal) and stuck to the baseboards with aquadhere. The correct position of this "ballast" was found by first laying the track completely, lightly pinned each 3 or 4 feet, and running a pencil along both sides of the track as laid. After gluing about 4 to 6 feet of foam plastic, I glued the track to the foam using aquadhere again. By following this procedure, I could alter the plan if found necessary during construction. As it happens I did do this to put in the "S" curve near The Basis station. I originally planned for the existing siding track to be the mainline, and where the "S" curves are to be a straight siding. Experience has told me that I should have stayed with the original plan, as long wheelbase locos derail when proceeding out of the "S" and across the rightangle crossing. I think by deepening the track ruts on the crossing with a file I may overcome this problem,but I am not sure as there is no trouble when running over the crossing first and then proceeding into the "S" curve. It would not be difficult to revert to the original plan, but I rather like the look of a long rake of wagons snaking through the "S" and for an exhibition this looks well.

The foam ballast is not the ultimate in appearance and on a "non-portable" layout I think I would cover it with a loose ballast of some type. It gives quieter running though and looks well enough for exhibition work, without spilling everywhere when the layout is moved.

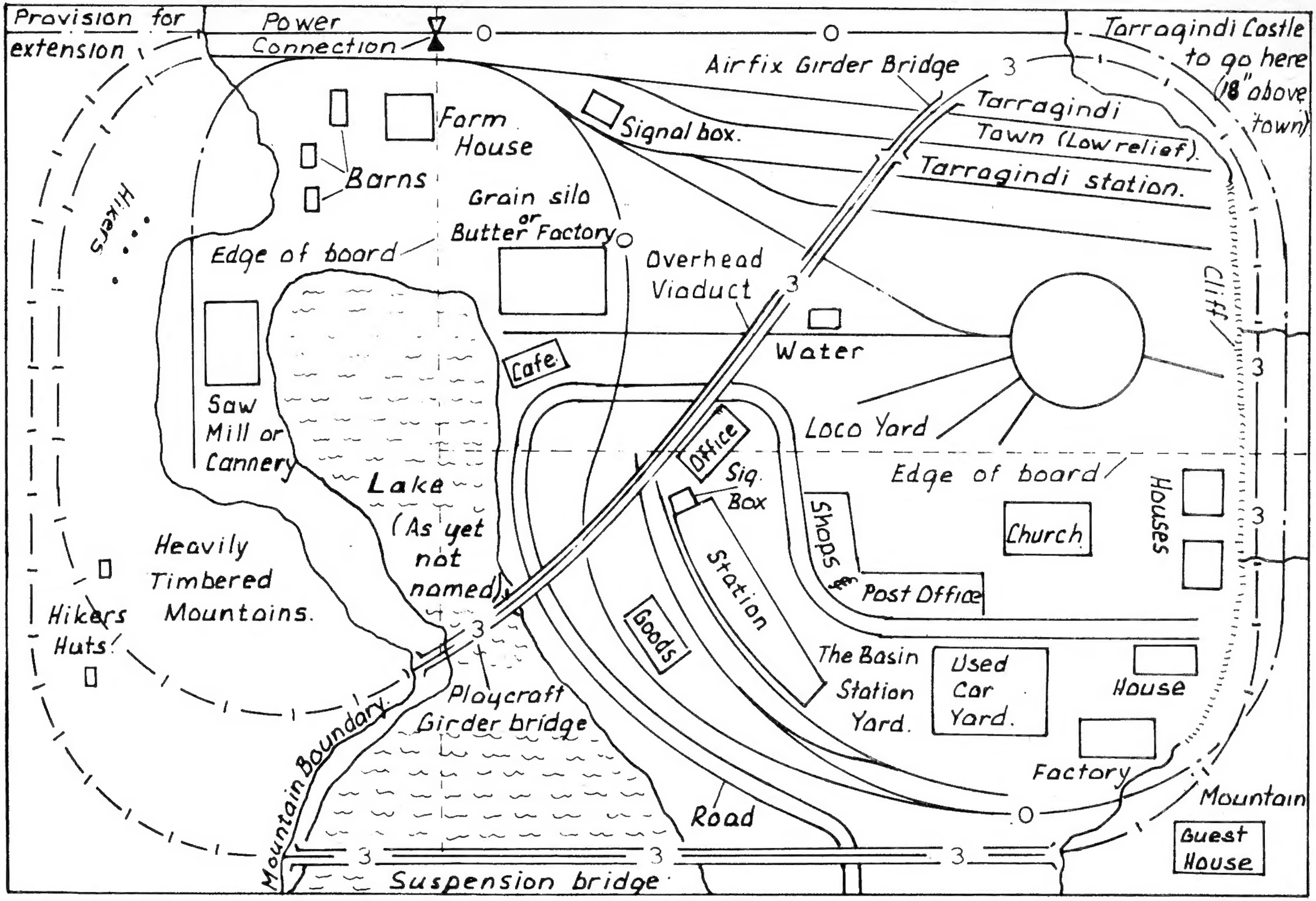
The mountains were built up by the usual wire and plaster method after first edging the boards where the mountains were to go with masonite into which workholes are cut at strategic points to allow access to the tunnelled track for cleaning and maintenance. Paper hand towels and calico were the materials used here.

The colouring used for effect was cement colouring applied by means of a kitchen sieve, sprinkled on dry while the plaster was still damp. Colours used were black, red, green and yellow sprinkled separately in that order. I experimented with mixing these to make one application, but found they all took on the colour of black. (The mixture was ½ teaspoon of black to one teaspoon of each of the other three colours). For variety of effect I used white plaster down the lake end of the layout and mixed red ochre in the plaster up the other end. I am not sure which end looks better with its base plaster colour showing through the "grass" colours. Each has its own appeal and both look well.

Before the plaster set I also placed a set of four merit hikers in the plaster to see if they would stay in position during the moves an exhibition layout gets. This has proved successful, as also has the holes made in the wet plaster to take the trees in the mountains. A line of cliffs was built behind the Tarragindi Station using some broken up pieces of fibre type acoustic tiles pinned together piece upon piece and plastered over, taking care to retain the jaggard appearance. I am not altogether sold on this method, and have since seen a similar cliff built out of small pieces of slate which I feel is infinitely better.

The cement colouring is quite effective, but a bit dirty to handle on an exhibition layout with all the movement and handling it gets, but for a stay-put layout is ideal as it is quite cheap. I used 1 lb. green and about 3 lb. of each of the other three colours and cost ranges from 30c. to 50c. depending on colour. Faller and similar materials would cost about 10 times this amount to do a similar area. Dyed sawdust was tried on the first "The Basin and Tarragindi Railway" and found wanting.

The finishing touches of the layout have yet to be completed, there being no tunnel portals, the arches of the overhead viaduct are not yet filled in, the turntable just another piece of scenery as it is not yet wired etc., but the appearance is such that the average public viewers do not notice these matters. At the time of writing this I am considering selling the layout "as is" so I don't know if I will finish these details.



LEGEND: —— 0 —— Track in view at zero level. —·—·— Hidden track at zero level.
—|—|— Hidden track rising from 0 to 3". —3— Track in view at 3" level.

THE BASIN AND TARRAGINDI RAILWAY 9'-0" x 6'-0" NOT DRAWN TO SCALE

The setting up of the layout is quite a speedy affair - less than half an hour from unloading from the conveying vehicle. The track is joined from board to board by means of small joining rails and the three baseboards are held firmly together by the bolting together of locating and clamping boards set underneath each board along the edge where it sits against its neighbour (figure 4.). There are eight of these joining rails and the whole layout fits together well enough to make wiring of the mainline necessary in one place only. This is actually done on one of the joining rails. A second joiner rail is also wired for emergency use if the first one comes adrift during an exhibition. To date this precaution has not been required.

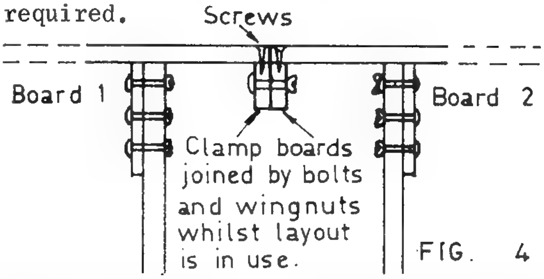

Screws
Board 1
Board 2
Clamp boards joined by bolts and wingnuts whilst layout is in use.

FIG. 4

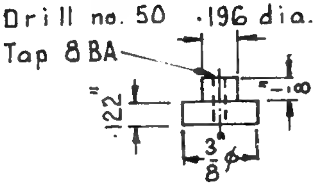
I kept a log of time spent in constructing this layout and have so far taken 78 hours to get to this stage. The time spent in constructing buildings etc. is of course extra. The accompaning plan of the layout marks in where the buildings are located, but as all buildings are removable for transit and can be interchanged, a few buildings are really allocated a permenant position on the layout. Those that are, have been marked with a "P" on the plan. Some buildings are even interchanged with others that I have that are not shown on the plan, e.g. the timber mill can interchange with a fish cannery and the grain silos with a butter factory. This arrangement gives variety to the layout if it is exhibited in the same area more than once (at a school fete then a church fete for example).

All in all The Basin and Tarragindi Railway achieves all that was aimed at as it is quite a good plan for timetable running and shunting as well as exhibition work. It has a total trackage of approx. 100 feet - about half of it mainline.

bogies and couplings for trian coaches

by Ken Down.

To those who own Triang bogie stock or who have purchased "scrap plastic" from the Vic. Branch, I suggest this method as a simple and easy way to mount the bogies and couplings.



(This dimension is for Central Valley bogies on Triang coaches.

FIG. 1

Firstly you need to provide a pivot for the bogies. If you have a lathe or a friend who can do some turning for you, obtain some ⅜" dia. brass rod and turn it down as in figure 1. A flange 0.122" thick gives a bolster which will bring the roof height of a Triang T.C. coach to 13'6" (scale height). Now all that is needed is to press the piece of brass into the pivot hole in the mounding. After removing the roof of the coach, place the hole over a piece of wood with a flat, smooth surface (preferably held in a vice) and firmly push in the piece of brass. This method will lessen the risk of cracking the plastic. The bogie is then mounted with an 8 BA screw, and after adjusting for as little play as possible, locking with a nut on the inside.

I have found that for best results the coupling whould be mounted on the bogie in preference to on the body. The following notes apply particularly to Central Valley bogies, but the same principal can be used with any make of bogie.

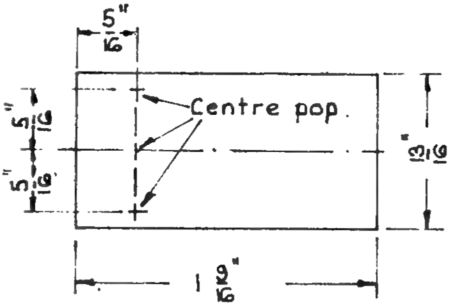


FIG 2

Take a piece of 20 gauge brass 13/16" x 1 9/16" and scribe a centre line down the length, and another at right angles 5/16" from one end (fig.2). Centre pop as shown and drill three holes with a number 49 drill on the centre pops. Enlarge the centre hole progressively until it is 7/16" dia. Do this with the brass plate firmly clamped to a piece of scrap such as 1/8" x 1". This will keep the drill firmly in the centre as you get to the larger sizes and counteract any tendancy of large drills to give a triangular hole in the thin plate. The next step is to shape the plate as shown in fig. 3, using a piercing saw and file. The end to which the coupler is to be fitted can be shaped to take any make of coupler - mine was for X2F.

Modifying the Central Valley bogies.

The two hollow rivets which hold the bogie together should be removed. With a number 47 drill in your electric drill, just touch the riveted over end of the hollow rivet with the point of the drill and this will remove that little ring on top, allowing the rivet to be pulled out. WARNING Do not try to drill the rivet out with the number 47 drill as this will enlarge the hole.

On assembling, it will be found that the holes in the castings are a neat fit on a number 1 - 72NF bolt. B.A. bolts are too sloppy, the nearest, 10 B.A., being nearly .007" smaller than the hole. It would seem that the bogies are made to take the number 1 - 72 NF bolt. Put the bolt through the plate (fig. 3.) then through the two bogie castings and secure with a nut underneath. Slip the two axles into their boxes, making sure that the insulated wheels are both on the one side. Hold them in position in the palm of your hand, slip the round bolt through the plate and assemble the second bogie side as before.

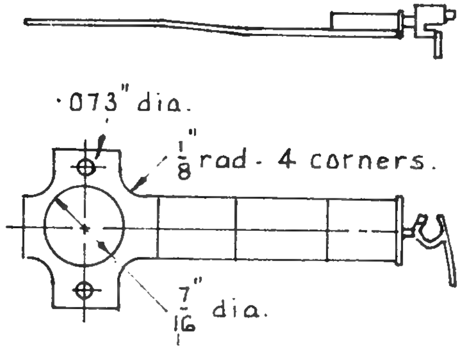


FIG. 3.

You should now find you have very good running coaches. I have found with this arrangement I have no trouble with the coaches coming off on bends, or uncoupling whilst going through points or crossovers.

convention report

by TED FROST.

Now that it is all over and we at the M.M.R.S. have had time to catch our breath, so to speak, perhaps it is appropriate that we should place on record a report of the International Convention of Railway Modellers held in Melbourne from 2nd to 11th March, 1970 inclusive.

First, let us examine just what was the highlight of the event. Perhaps to the 150 people who were delegates this would mean a number of items, on the somewhat crowded 9 days, as different things appeal to different people. To me though, there was one thing that stood out above all else, and this was the presence of Linn Westcott, the Editor of Model Railroader.

Linn's visit to Australia was a tremendous boost to our hobby and he did not spare himself while here either. Apart from our convention, Linn visited private layouts as well as AMRA and SMRC Clubrooms in Sydney and through him we found just where we stand as far as our standard of work goes. Naturally, we at the MMRS are thrilled to the back teeth with our club layout which Linn has placed inside the first 10 layouts in the world that he has seen. Here in Melbourne at Geoff Sanden's home we also have the best N gauge layout he has ever seen. It is also one of the best he has ever seen in any gauge - our congratulations Geoff. John Yourn's layout was also very impressive to Linn, but unfortunately by the time you read this John's layout will be just a memory. He has had to move residences for business reasons and the layout is now gone.

On the programme side, just where does one stop as far as highlights go? In their own way each event was a highlight - from the opening clinic on scenery, most capably handled by John Yourn and Keith Main, to the Farewell Dinner; nine action packed days later.

These three will serve to illustrate this point:

Sunday Evening - an absolutely fantastic clinic by John Allen on his Gorre and Dalpheid - 117 colour slides and taped commentary on how to photograph a model railroad - a really great clinic this one and one which the MMRS will have available for hire to clubs as soon as our copy arrives from John Allen. This was followed by a successful Auction with the prize item - a special railway engineer's cap from one of our American visitors - which is now the prized possession of one Reg. Monash.

Monday - Moomba Procession, followed by a visit first to the AMRA exhibition at Hawthorn Town Hall (a wonderful show chaps), then on to the Locomotive Society of Victoria's Live Steam layout at Moorabbin for another real highlight event followed by a barbeque. Our thanks to Murray Hill for this wonderful few hours. In the evening we had a fine slide show back at the convention headquarters.

Tuesday - Visit to Tramways Depot. Clinic on "how to operate a Model Railroad". This one by a panel of three (Ken Elder, Merv. Robin, and John Robertson) from the MMRS, really sold a number of people on operating a railway where as prior to this they were just "tailchaser" fans who have never looked past the round and round layout plan.

The womenfolk of course had their own "non-rail" programme, but that is another story.

Our delegates came from Canada U.S.A.,Scotland and England as well as all eastern states and if there is any disappointment we do feel it is perhaps about our attendances. The support from the Australian modellers was definitely down on what we had hoped. Especially was this noticable as far as those in N.S.W. were concerned. I discussed this with a number of people in N.S.W. later in March while I was up there with our overseas delegates. They all said,that with the experience of a rather dismal and haphazard convention up their way 12 months earlier, they felt that it would be a waste of money to attend this one. The reports they received from the three or four N.S.W. delegates who did come was such that they were extremely sorry to have missed attending.

If we look at the financial side of this convention,we did fail in that we did not cover our expenses. But, how can we measure in dollars and cents, the value to the hobby in Australia that has been gained by this venture? Surely the loss of a couple of hundred dollars on a convention such as this is more than offset by the goodwill and friendship the hobby has gained and who knows perhaps some of our hobby suppliers on reading this may lessen our loss by a donation of some sort.

The standard of entries in the various contests really had to be seen to be believed. They were certainly the equal of anything ever seen in Model Railroader,Railway Model Craftsman, Railway Modeller, etc. All in all we had over 70 entries to the various classes in the contest and the judging was no easy task. Our thanks must go to Ken Elder for the preparation and design of the section winners' certificates and to our panel of judges Frank Kelly, Ken Elder, Mal Baker, and Keith Nelson (the Presidents of VMRS., MMRS., AMRA. Vic.Branch and FMRS. respectively). We must also give a big thankyou to Four Square Stores for the magnificient trophy donated for the Model of the Show Award. The donation of this trophy by a wholesale grocery organization and no trophy from Model Railway equipment wholesalers, brought some rather adverse criticism from many of our overseas guests and delegates and I found this rather embarassing to say the least. Comments like "what do they do to promote the hobby?" are hard to answer at a time like this. In fairness to the wholesalers I must point out that they were not approached for any help, but neither was Four Square Stores - they heard of our efforts and approached us with an offer of any help we needed.

The comparison of the various facets of the hobby in Australia with the same facets as found in the overseas countries was almost inevitable at a convention such as this and here again we were placed in the position of having to sit shamefacedly at one of our coffee and "bull" sessions to listen to one of the overseas delegates level some rather strong criticism about being refused the standard club member discount upon presentation of both his NMRA membership and home club membership cards at a hobby shop in Melbourne. This is apparently quite unheard of in both North American and also U.K. hobby shops where he would find the club member discount does apply. Another of our delegates came armed with letters of introductions to one of the local retailers from certain U.S.A. manufacturers and he was far from impressed by the local retailers' attitudes,and lost no time in telling all of his fellow delegates his thoughts. No doubt he will also report to the manufacturers his reception at the same shop too. Fortunately if we ignore the comments re the prizes, of all the facets discussed and compared this was the only section of the hobby where the overseas delegates found we were not up with the rest of the world.

Now, what is it that we have gained

through this convention? As I see it there are a number of very positive gains and in my opinion these are as follows:

1. The general public have been made aware at least in part that the followers of the hobby are not just a bunch of little boys who refuse to grow up. The wide publicity in the Melbourne Press and the Melbourne and Sydney T.V. footages re the MMRS layout went a long way towards this. The excellent models on display in the hotel foyer for 10 days also helped a lot.

2. A number of Model Railway wives have a very much different attitude to their husband's hobby now - surely a very important breakthrough.

3. A very active train of thoughts by the various clubs in Melbourne towards co-operation (and perhaps even amalgamation?) with other clubs.

4. The first time ever for us to get some idea of how our standards compare with those standards set by hobbyists in the U.S.A.,Canada and Europe. I feel that this is one of the real benefits we have gained. Prior to this convention we had no real knowledge of the standards we have achieved.

5. A very much better knowledge of our own Railway Industry and let us not overlook the fact that our railway industry does compare favourably with any country in the world including the U.S.A., in most facets of operation.

6. Through the clinics, we have all gained a considerable knowledge of different sides of the hobby that previously we were inclined to either ignore completely or to rely on our fellow hobbyists to do for us.

7. A realization of just how wide an appeal our hobby does have. Delegates ranged from doctors to railwaymen,from soldiers to accountants, from tramway employees to bankers, firemen to chemists,telephone mechanics to toolmakers and so on. What other hobby has such an appeal to such a wide variety of people with such a far ranging variety of employments?

8. The number of new friendships made at the convention is another major benefit gained.

The number of photographs taken over the course of the convention was quite considerable as you can imagine, but I have purposely refrained from providing any to illustrate this report, as I feel that perhaps I was too close to this convention to make a selection that will show the spirit of the convention as it really was to the general delegate.

I have endeavoured to give a brief outline of what we did at the convention, without undue emphasis to any one side of the programme at the expense of another. Perhaps one of the AMRA members who attended the convention would like to submit to Journal his impressions of the programme from the point of view of someone who arrived in Melbourne with not very much of an idea of what to expect. As one who has lived with this project for over two years,perhaps my report may be reflecting some things as I saw them from the position as one of the organizers with a considerable amount of background knowledge and this may be somewhat different to the way the average delegate saw things.

AMRA MEMBERS.

Take the opportunity of meeting fellow members. Attend the Model Railway Exhibition (see page iv), and meet members from the country and interstate. Then we'll see you - make yourself known.

point and signal motors

by ALLAN DOWEL.

This is the first of three related articles. The next one is "Signal Tripping on the Mousehaven" which tells how Stuart Westerman uses these motors in a circuit whereby passing trains restore the semaphore signals on his layout. The third article "Mini Switches and Mini Panels" tells you all about the simple and reliable little switches which are used on the MMRS (Melbourne Model Railway Society) control panels, as well as on my own layout and those of several of my close associates in the hobby. If you are looking for small components for an N scale panel, then this is for you. On my HO/OO layout my main terminal station panel measures 21" x 4½" of which 11" x 4½" is blank for holding the timetable! These mini switches control the point and signal motors which are detailed in this article.

When I consider anything to be operated by electro-magnetic means the most economical device to use is the P.M.G. 3000 type relay. These will be available from disposal sources for longer than I will be around, as the P.M.G. currently uses millions of them and they are now obsolete. John Yourn has been able to come to an arrangement with a junk dealer to buy selected relays in small quanltities and can supply them to members at 40 cents each.

Before I start, I would like to make it quite clear that this type of point motor takes power for the whole time that the points are switched to the lesser used route. Some people claim that this is a disadvantage. I dispute this. At any one time, only very few motors would be energised. Assuming a coil resistance of 100 ohms, then 8 point motors would have to be operated simultaneously on 12 volts D.C. supply to draw 1 amp. of current. It would be a mighty big layout that would have more than 8 points set in the lesser used direction at the one time.

The advantages in using relays are:

(i) Cost, about 50 cents per point-motor.
(ii) Simple switching, a common on/off switch of any type.
(iii) Simple wiring, one wire per motor plus one power common.
(iv) Direct panel indication - the switch clearly shows which way the point is set.
(v) High quality - which means reliability.
(vi) Little labour.
(vii) Many precious metal contacts for miscellaneous functions, frog switching, interlocking, panel lamps, etc.

The disadvantages are:

(i) The point blades must be quite free to move. Peco can be made suitable by removing the over-centre spring.
(ii) The relay projects about 4" down from the underside of the baseboard.

The Parts.

The first and most important part is of course the relay. For 12 volts operation, the coil should be about 100 ohms. A popular P.M.G. size is a double wound "200 + 200" ohms. These are ideal, as the two windings can be connected in parallel to give 100 ohms. Higher resistance coils need higher voltages - 400-500 ohms need 24 volts, 1000-2000 ohms need 50 volts. We found in the MMRS that it was cheaper to build a special power supply to suit the relays which we could get cheaply. This is far easier now that diodes have replaced dry plate rectifiers.

Springsets are not nearly so important, but always go for the relay with the most springs. However, for point motors you chould have at least one "C" (changeover) unit or one "B" (break) and one "M" (make) unit to power the point frog. For signal motors you should have a minimum of one "M" unit plus one "C" unit and another "C" unit if you are going to use colour light signals. (One "M" and one "B" can equal one "C" springset).

Three simple parts need to be manufactured to convert a relay into a point or signal motor. They are:
(i) A base and terminal plate - from 3/16" hardboard.
(ii) A mounting bracket.
(iii) An armature extension.
These parts are shown in figures 1-3.

The base and terminal plate fits flat against the underside of the track baseboard. It is attached by means of two ½" No.4 R.H. steel woodscrews with ⅛" x 5/16" washers under the heads, through the two ¼" diameter holes. This permits final minor alterations to positioning. The plate carries up to 14 ½" x ⅛" C.SK. whitworth metal thread screws in C.SK. ⅛" holes along two edges of the plate to be used as terminals.

For each terminal required, a screw is fitted to the base with one ⅛" whitworth nut before the wiring and very tight. An ⅛" tube spanner is a good investment for this work. A popular type with a red fluted moulded plastic handle costs about 60 cents.

The remaining two ⅛" holes are to attach the mounting bracket and the ½" hole (required only on point motors) is to clear the armature extension which projects up through the track base.

The bracket connects first to the relay by using the relay coil nut, then mounts the relay on the base and terminal plate, again with ½" C.SK. screws. If difficulty is encountered in cutting and bending the metal for the bracket, the width can be increased to ¾" and the gauge reduced to 24 (a popular galv. iron sheet size) by moving the two ⅛" mounting holes of the baseboard ⅛" towards the centre and drilling the corresponding holes in the bracket in the centre of the bracket. The 3/16" hole however must remain ¼" from one edge. It may then be necessary to cut a little from one edge of the bracket to clear the ½" hole in the baseboard.

The armature extension for point motors is made from ⅛" brass rod (I use brazing rod) to which is soldered a short piece (2½") of piano wire, about 1/32" in diameter. The relay armature is removed by first unscrewing the armature retaining screw (the one with the coil spring around it). It is a good idea to identify which armature goes with which relay, as this can save adjustment to the angle on re-assembly. The brass is first soldered to the armature. I used a simple jig made from timber to ensure a standard position and angle. It may be necessary to first file the plating off the area of the relay armature which is to be soldered. Lastly, the piano wire is soldered to the other end of the brass rod. You must clean the paino wire, preferably with a fine file to ensure sufficient cleanliness for soldering or use a strong flux such as Bakers Solution. The two parts overlap by 1 inch.

Wiring.

For fairly obvious reasons, it is better to attach the relay to terminal screw wires before refitting the armature to the relay. I strip both ends of any short pieces of insulated wire which I save from layout wiring projects, baring about ¼" of wire. The ends are bent into a U shape, clamped tight around the spring terminals, or passed through the coil terminal holes, then soldered. The opposite ends are then cut, leaving sufficient slack wire to shape the wire neatly against the base and to allow ½" to be stripped for attachment to the terminal screw.

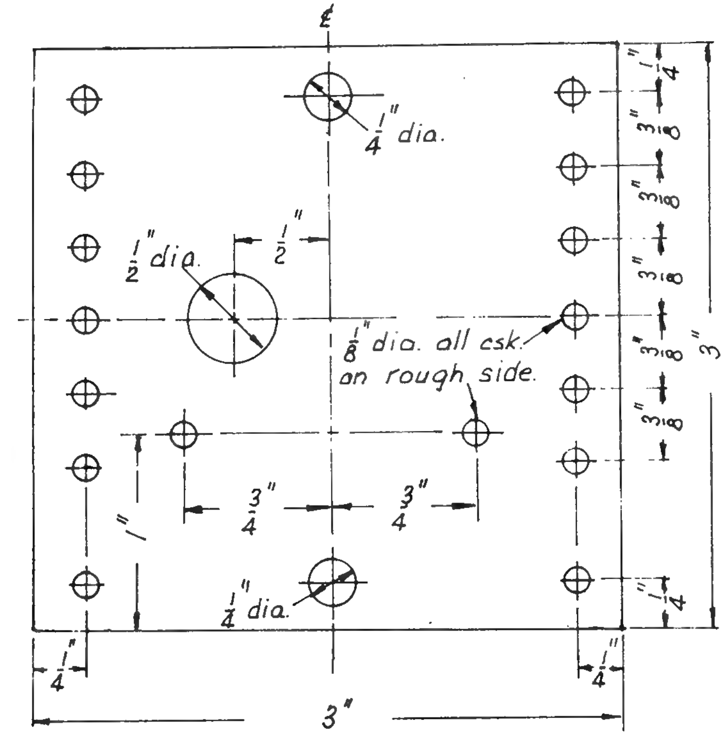


FIG 1. BASE AND TERMINAL PLATE
Material: 3/16" hardboard.

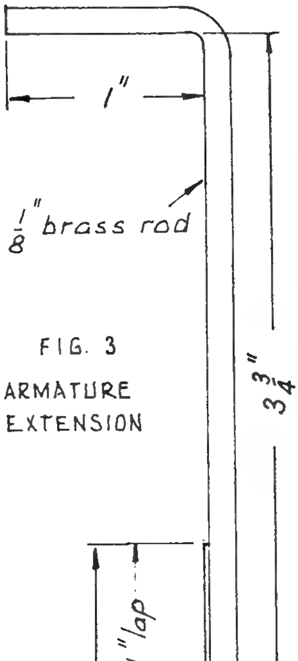


FIG. 3
ARMATURE EXTENSION

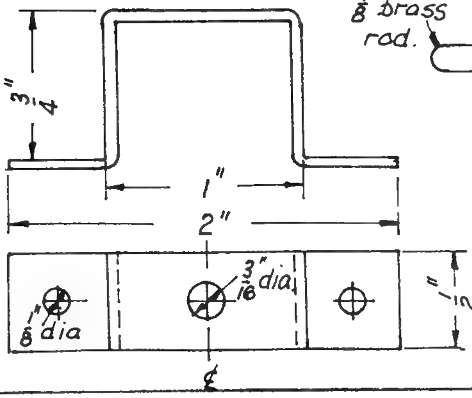


FIG. 2
MOUNTING BRACKET
Matl. 18 ga. steel

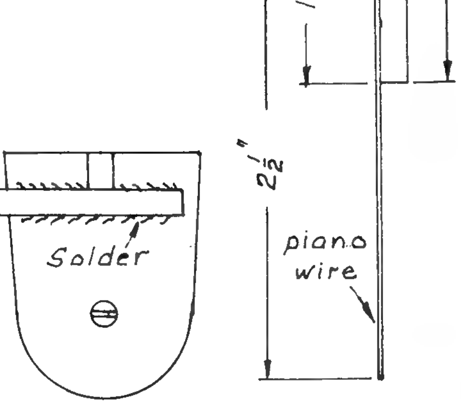


FIG. 4
ARM EXTENSION ON ARMATURE

The ½" is then shaped around the screw (clockwise to the wire end) and secured with a second ⅛" nut.

The layout wires will later be attached by using a third nut on each screw.

When fitting the armature back into the relay the armature extension is first fed through the ½" hole in the base. The armature can then be slid along the knife edge if the springsets are strained a little away from the relay frame with the thumb and index finger of one hand. When refitting the retaining screws, tighten it gently. It is really a little screw with a big head and made of brass, it will easily shear. A pocket screwdriver should be used, and even then, very gently.

Adjustment.

If the correct armature goes back on the relay, there should not be a need to adjust its angle. However, if you have to, grip the solid face and press the hollow face onto the workbench and you will feel it bend. The angle is correct when you can just slide a .031" feeler gauge between the coil face and the centre of the armature. If you do not have a gauge, then the angle is correct when the "make" springs of the relay just lift off the buffer block (white plastic block between the springs) when the armature is fully operated.

One fact often not appreciated about electro-magnetic circuits is that the magnetic pull required, increases in relation to the air gap at the "squared law" rate - double the air gap and you need four times the power. Increasing the air gap to gain more "stroke" or movement is thus a very inefficient method. It is far better to lengthen the armature extension if you want more movement. The extra power required will then be directly proportional to the length of the extension. The 5" total armature length of our point motors gives a throw of about 3/16" at the point throw-bar with standard armature air gap. As an HO/OO point has a throw somewhat less than this, the extra travel is taken up by the piano wire bending. This results in quite wide tolerance and later re-adjustments are avoided.

The springs are in correct adjustment when the two contact "domes" on each spring touch at precisely the same time and when the spring which rests on the buffer block is just lifted off the buffer block by the "lever" spring (the spring moved by the armature). Unless the relays have been damaged, there should be no need to touch these adjustments. However, if they need some adjustment, it can usually be carried out by bending the tips of the "lever" springs (one or both tips) with pliers, or by twisting a pocket screwdriver in the gap between the two tips. It helps a lot if you have good light and work over a white surface. Remember that it is the simultaneous "twinning" of the two silver contacts which accounts for the terrific reliability of the 3000 type relay.

A final check on adjustment is to measure the movement of the piano wire just where it comes through the base plate by laying a ruler on the rough side of the base plate. The "throw" should be between 5/32" and 3/16". If not, the armature gap is not correct and should be adjusted.

If the relay is one which has few springs, the restore tension of the springs may be insufficient to return the points to normal after operation. In this case, I put a lot more tension on one or two of the "lever" springs by gripping them near the "root" and giving them a "set" towards the armature. If there are springs which have been wired, then re-adjustment of the tips may then be necessary.

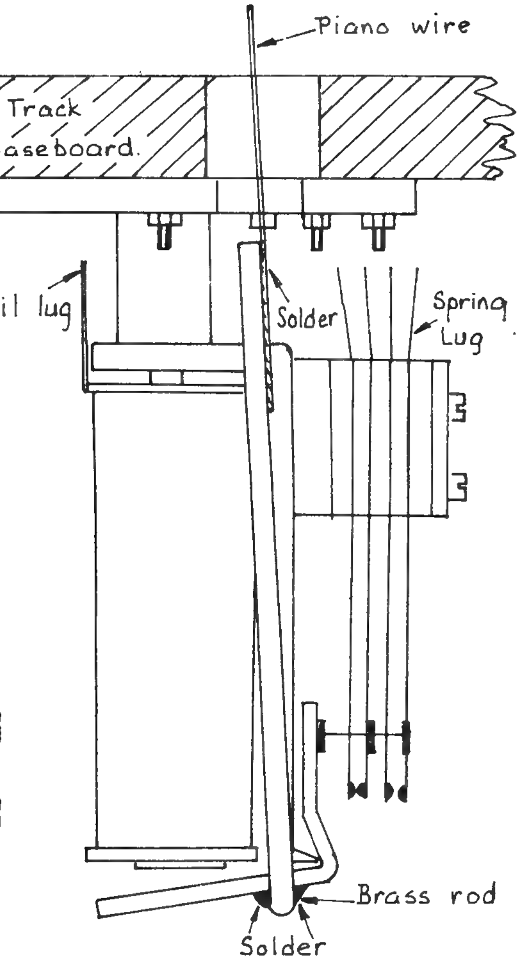
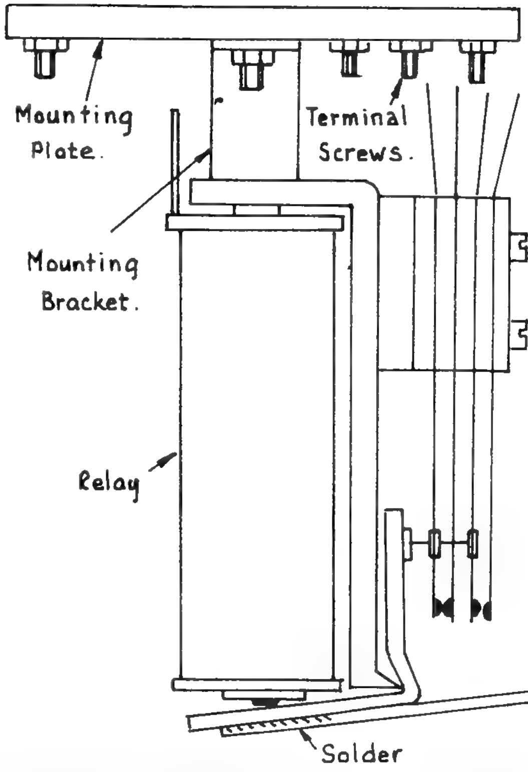


FIG 6 (above) POINT MOTOR.

Fig 5 (below)

RELAY MOUNTED AND CONNECTED TO SIGNAL WIRE



SIX HOUR DAY WEEKEND

3rd, 4th, & 5th OCTOBER
SYDNEY TOWN HALL

MODEL RAILWAY EXHIBITION

Fitting to the layout.

Before fitting to the points, it is necessary to ensure that the point blades are free to move. A good test is to roll the points over to a vertical plane - the blades should flop over with their own weight. A little graphite (pencil) will often fix an obstinate point.

The point throw-bar should have a hole in the centre, a little bigger than the piano wire. The track base should have a ½" hole below this throw bar hole. The point motor is then fitted to the underside of the track baseboard, passing the tip of the piano wire through the throwbar. The base plate is then moved across the track line until the motor fully operates the point blades in both directions.

At this time draw a pencil circle through each of the 3" mounting holes in the base plate. Remove the motor, drill two pilot holes in the centre of the two pencil circles, then refit the motor using 2½" x No.4,R.HD. woodscrews each with a ⅛" x 5/16" washer under the head. Final adjustment ~~is~~ made to the position before the last tightening of the screws. The excess piano wire can now be cut off about 1/16" above the throw-bar.

Wiring.

One coil terminal screw of each point motor is commoned over all point motors and connected to one side of the power supply. The other coil terminal screw is wired to each point switch. The other side of the switches are commoned together and to the other side of the power supply. (See fig.7.).

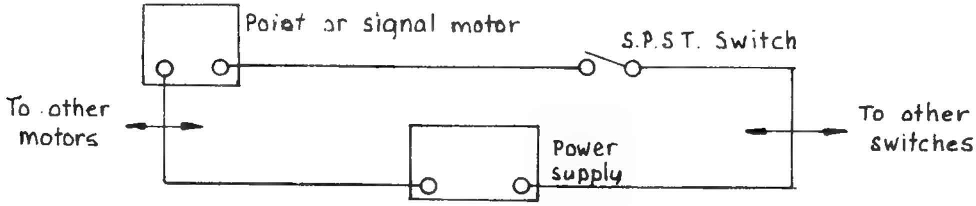


FIG. 7 MOTOR WIRING.

THE POP VALVE!

FOR READER'S LETTERS

The Editor,
AMRA Journal.

Dear Sir,

As my name was mentioned in a letter to "Pop Valve" by Ted Frost in May/June issue of Journal I feel I must reply at least to that particular section.

Ted asks the question as to what we can offer, in AMRA, to members besides Journal. He states that we must offer much more than we do to fellows like Broughton Boydell and myself who live in the country. May I say at this juncture that AMRA doesn't need to offer me any more for I have been more richly rewarded than ever I thought possible, but I want to point out that if members join the Association for what they are going to get out of it they will get very little - not because AMRA has nothing for them, but because they are approaching membership from the wrong angle.

Nobody can get anything more out of life than they are willing to put into it and if the members of this Association want to get the most out of their membership they want to try and give something of themselves.

AMRA grew out of a handful of devoted railway modellers led by Tim Dunlop who were not interested in what they could get,but what an association like this could mean to others.

Jack Treseder has been wanting to build a layout for himself for many years, but he has been so busy doing jobs for AMRA that there is never time. There are many more who deserve mention but space will not permit. Merely let me say this, Tim Dunlop and Jack Treseder have done so much for the hobby in Australia that theirs is an example we all could follow.

For myself I am grateful for the friendship that I always find among other members where ever I go.

CEDRIC ROLFE.

The Editor,
AMRA Journal.

Dear Sir,

Following the successful sales of publications at our recent AMRA Moomba Exhibition in Melbourne, I promised that I would start a series of "How To Do It" type books for AMRA sale.

I have decided that the broad subjects of the first two books should be in the areas:

1. Track-Wheels-Points-Point Motors, which would deal with commercial supplies, home manufacture, track standards etc.

2. Electrical Circuits, dealing with track and point wiring, control panels and components,power supplies and everything electrical.

I think that we have proved that sales at the Melbourne and Sydney Exhibitions and to members would warrant a quantity which would permit economical production in a style at least equal to Journal. Based on one new book a year, I picture a publication like Journal, but of course with many more pages and a similar proposition of advertising.

This will be quite a task as you well know, I therefore would like through "Pop Valve" to ask for the cooperation of all members in two areas:

(a) I will have difficulty in obtaining sufficient photographs. I would like members to send to me any black and white photos which they consider could even remotely be associated with the subjects, particularly with a mind to suitable 8" x 6" cover pictures.

(b) I am not a "know all" so I would appreciate even a brief scribbled paragraph from members to ensure that these publications have the complete and up-to-date information on the subjects in Australia. I am looking for anything from a small handy tip to a complete scheme. These will be discussed and the resultant entry will be the result of these discussions.

Members could write to me direct at
82 East Boundary Road,
East Bentleigh, Vic., 3165.

ALLAN DOWEL.

The Editor,
AMRA Journal.

Dear Sir,

Last year a very good mate of mine decided that I should become a member of your organization, so he paid my fee. He was thanked profusely.

AMRA sent me the pamphlets and booklets which normally go with any new membership. Not being a good reader I did not read them immediately. However in due course they were all carefully read and studied especially the Beginners Guide by Allan Dowel.

Whilst I was only a humble member of the Prospect Model Rail Club, I was a comparatively happy model railway enthusiast. I obtained a small layout and some stock to run and bit by bit the layout was enlarged and so was my rolling stock. The layout now is approx.19' x 10'. My locos and rolling stock is a mixture,British (Triang) Continental (Fleischmann, Rivarossi, Hamo) and American (Rivarossi). The English Channelwas successfully bridged and I was in the process of bridging the mighty Atlantic, when I got "pressed" into AMRA and thence into friend Allan's Beginners Guide. Now I am at my wits end, falling away to a shadow, can't sleep at night, toss and turn, finally got kicked out of my quarter of bed by the other half that would rather buy a new fur coat than let me get some urgently needed brass locos.

Having read Allan's book I fail to see how my trains even run. What am I to do now? On page 13 of the book, it says plan - plan -plan, before you spend a penny. Now I'm in a quandry. What shall I do? Make do with what I've got? Scrap the lot and start all over again, but this time PLAN? Resign from AMRA and make believe I never even heard of the finer art of Railway Modelling? Another friend is in favour of scrapping the lot and passing the whole lot over to him, he says he is willing to take over the burden of my worries. Very big of him. Perhaps someone could come to the rescue, by giving me some much needed advice. What should I do?

Make do? Scrap? Resign?

BOB PAYK.

The Editor,
AMRA Journal.

Dear Sir,

I hate to pull the other chap to pieces, but when we get an article as wrong as Ted Frost's "The Commercial Development of our Hobby",I feel someone should write and in fact someone-else may do so.

The enclosed was written some weeks ago, roughly, but time has stopped me getting it away before this.

O gauge,as such, was well established before Ives took it up and Ives were using it for clockwork before they introduced electrics - anyway all that is in what I have written. A lot more could be said regards O gauge and the coming of standards, but it would make the letter very long. As it is it may be too long to use, so perhaps you may prefer to run it as an article in two sections or even forget it.

I often feel it is a pity the early history of our own Association is not written up,for as time goes on it gets harder to get a true picture and also while we still have a few of our early members with us any errors may be corrected.

We have had quite a few publications in our time in Australia and also many who have tried to build a business supplying parts and kits. I think it is a pity these efforts cannot be recorded also.

BROUGHTON BOYDELL.

Broughton's enclosure will appear as an article. It not only covers "O" gauge, but HO, OO, triple O, N, No.1 and No.2 gauge. Our 100th edition will contain some of our previous history.

EDITOR.

Branch Reports

VICTORIA

Everybody in the Victorian branch are now preparing for the second half of the year activities. The responsibility of organizing the 1971 Moomba Exhibition is now in the hands of Jack Treseder and we all wish him the best of success in getting the function to an operating level.

Our June meeting held on Thursday 11th turned out to be a great success Mainly due to our Guest Speaker, the evergreen Ray Pearson, who brought along a great number of suitcases filled with all types and sizes of "O" gauge locos and rolling stock from about the year 1900, such as Hornby, Bing, Robilt, Lionel, Bassett Lowke and many other brands. It was with great nostalgia that the older members viewed these exhibits and Ray told some amusing stories of how the different locos and rolling stock were obtained from 3 pence upwards. Everyone voted it a wonderful lecture and a vote of thanks was given by Jack Treseder.

Victorian members will note that arrangements are in hand for a trip to the bush in possibly the same D.E. rail car we had last November. Members will be kept informed. Also it is hoped to arrange a car trial again later in the new year.

An apology to Ken Down, our librarian, for his name being left out of the committee list, I suspect something went astray in the editing. Ken is again our librarian.

Lastly, may I appeal to all Victorian branch members to attend our monthly meetings, you know you are missing the "Get together and discussions to assist the Hobby".

Well that's all till September.

JOHN SNEDDON.

NEW SOUTH WALES.

Recent Branch meetings and activities have been fairly well attended, which is most pleasing. On 7th March, the layout was put through its paces, and on 21st March, another visit to the Tramway Museum at Loftus was held.

A working-bee was held on 4th April, and the layout was again operated on 18th April; it is interesting to see the number of 32 class that now make appearances. Also at this meeting trophies were presented to members Bruce Lovett, Ken Edwards and Phillip Lamour for their prize winning entries in the competitions, the winners of which were announced in the last issue of "Jouranl". To these members and the other winners we extend our hearty congratulations.

A colour slide evening was held on Friday, 24th Arpil, and a modelling clinic on 2nd May.

Coming Branch meetings are:

Saturday, 4th July, Visit to Enfield Loco Depot and Delec.
Saturday, 18th July, Visit to N.S.W.R. Signal School, Redfern.
Friday, 24th July, Colour slides of New Zealand by Graham Ball.
Saturday, 1st August, Models and Equipment Displays.
Saturday 15th August, Guest Speaker.

Friday, 28th August, Layout Maintenance and Operation.

COLIN GILBERTSON.

TAKE-OVER

The MURPHY TOY EMPORIUM of Forest Hill

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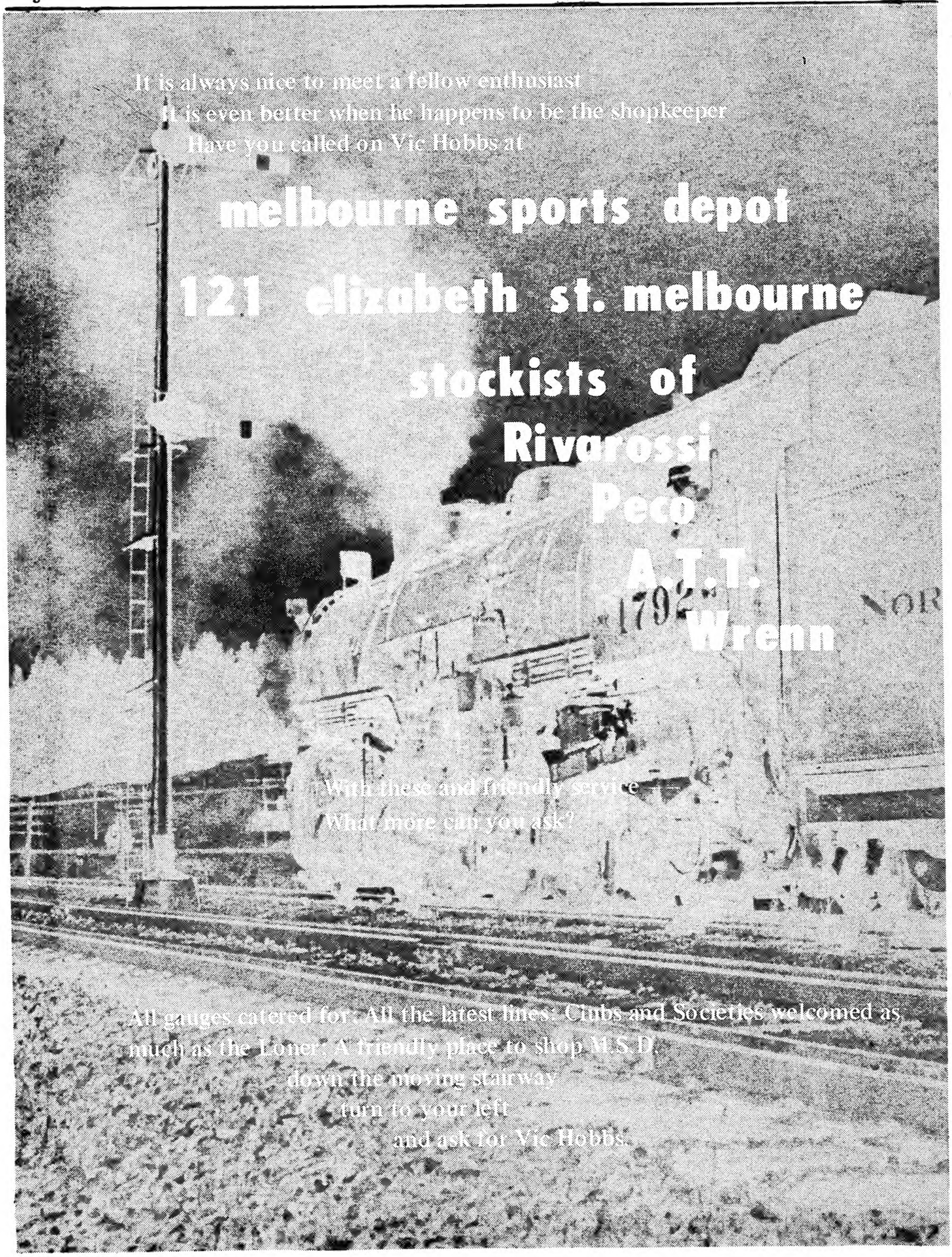

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It is even better when he happens to be the shopkeeper
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Comm Rails VEX Box Car (75' 0") $3.15
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NSWR LHO Pass Brake Van
NSWR 44 Class Diesel Elec Loco
Intercapital Daylight Set one piece bodies.
(Power Van – Buffet Dinner – 1st, 2nd).
Separate 1st - 2nd Cars also available

FRIEDMONT MODELS would also like to congratulate MALRIC MODELS (Baker & Doherty) for their foresight in choosing to have produced by us a series in the Victorian Railway Rolling Stock selection.
GY – U (can make a UB also) – B – Z Brakevan (4 or 6 wheel).

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7201M	Powering kit for Casey Jones	$27.50
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111729	Coach Bogies, 4-wh. Pair	$ 3.95
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